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ORBIT AND MASS OF THE VARIABLE STAR *ALGOL (β Persei).*

On the 28th of November a very important discovery was communicated to the Academy of Sciences of Berlin by Professor H. C. VOGEL, Director, and Dr. SCHEINER, Astronomer of the Astrophysikalisches Observatorium of Potsdam. I condense from the *Sitzungsberichte* of the Academy, 1889, (page 1045), the following:—

"Three photographic negatives of the spectrum of *Algol* taken during the winter of 1888-9 showed that before a minimum *Algol* was moving away from the sun, and after a minimum it was moving towards it. Three new exposures of November, 1889, confirm this result. The observations taken together afford a very strong support to the theory that the cause of the variations in the light of *Algol* is to be found in the eclipses of this star by a dark (invisible) satellite revolving about it. The phenomena can be explained by assuming the following particulars of the dimensions of the two bodies:—

"Diameter of *Algol*	= 230,000	geographical miles.
"Diameter of the invisible satellite	= 180,000	" "
"Distance between their centres .	= 700,000	" "
"Satellite's velocity in orbit . .	= 12.0	" "
"Mass of *Algol*	= $\frac{4}{5}$	of the Sun's mass.
"Mass of the satellite	= $\frac{2}{5}$	" " "

"Motion of both bodies in the line of sight (toward the Sun) 0.5 geographical miles."

E. S. H.

PROGRAMME FOR MERIDIAN OBSERVATIONS OF STARS.

When the REPSOLD meridian circle was ordered, it was designed to use it in determination of the absolute positions of the fundamental stars. Experiments during 1888 and 1889 showed Professor SCHAEBERLE (in charge of the circle) and myself that observations during the daytime were not at all comparable in precision with night observations. It is very rare to find the images in the daytime steady enough to deserve weight 2 (5 = perfectly steady, 1 extremely unsteady), while there are very many nights of weight 4 and weight 5 during the fair season (May to November). The Sun, *Mercury* and *Venus* were often observed at transit during 1889, and the images were always found to be of weight 1, or less. For this reason we reluctantly decided to abandon the plan of referring star places in Right Ascension to the Sun, either directly or through *Mercury* and *Venus*.

All our R. A. observations must then be differential.